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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,611	09/26/2001	Eisuke Kanzaki	JP920000194US1	7836

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EXAMINER

MASON, DONNA K

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/682,611

Applicant(s)

KANZAKI ET AL.

Examiner

Donna K. Mason

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Japanese Patent No. JP4303234 was submitted in an IDS filed on December 10, 2001. To comply with 37 CFR 1.98(a)(3), Applicant submitted the English translation of the Abstract for Japanese Patent No. JP4303234 in the paper filed July 14, 2004 for consideration by the Examiner. However, Applicant failed to provide a list of this Abstract for consideration by the Office. Therefore, the Examiner has cited the Abstract in the attached Notice of References Cited (PTO-892), and the Abstract has been considered.

### ***Claim Rejections - 35 USC § 103***

2. Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,553,445 to Drapkin, et al. ("Drapkin") in view of U.S. Patent No. 5,781,742 to Asano, et al. ("Asano").

With regard to claims 1, and 11-13, Drapkin discloses a data transfer device and method, the data transfer device including: a transmitting block (Fig. 2, item 202), a receiving block (Fig. 2, item 208), and a plurality of signal lines (Fig. 2, item 210); where data is transferred from the transmitting block through the plurality of signal lines to the receiving block, the transmitting block includes: a determination unit for dividing said signal lines into a plurality of groups (Fig. 3, bit group 1 and bit group 2; column 5, lines 29-53) and determining either inversion or non-inversion of data to be transferred regarding data transferred through said signal lines of each group (Fig. 3, item 312;

column 5, lines 39-53), where the determination unit includes a counting circuit adapted for counting a difference between data to be transferred and data transferred immediately before the data to be transferred to each group (column 5, lines 54-61); an inversion unit (Fig. 2, item 216) for inverting the data to be transferred for the group determined to be subjected to data inversion; and a transmission unit (Fig. 2, item 218) for transmitting the data through the signal lines, and the receiving block includes: a receiving unit (Fig. 2, item 222) for receiving the data transferred through the signal lines; and a decoding unit (Fig. 2, item 220) for returning, among the data received by the receiving unit, the data of the group having been subjected to the data inversion by the inversion unit to an original state. (See *generally*, column 3, lines 8-67 to column 4, lines 1-67).

With regard to claims 2 and 3, Drapkin discloses the data transfer device, where the transmitting block further includes an inversion signal output unit for outputting a signal indicating completed inversion in synchronization with data of the group, regarding the group having been subjected to the inversion by the inversion unit (column 6, line 67 to column 7 lines 1-3). Drapkin further discloses the data transfer device, where the determination unit counts the number of data to be transferred (Fig. 3, item 306; column 5, lines 29-39), which is different from data transferred immediately before for each group, and the determination unit selects a combination of either inversion or non-inversion for each group based on a result of the counting in order to minimize a sum total of changes of data for all the groups (Fig. 3, item 312; column 5, lines 39-53).

With regard to claim 5, Drapkin discloses a data transmitter (Fig. 2, item 202) for transmitting data of predetermined bits, including: a counting circuit for dividing data into a plurality of groups, and for counting a difference between data to be transferred and data transferred immediately before the data to be transferred for each group (Fig. 3, item 306; column 5, lines 29-39; column 5, lines 54-61); a selection circuit for selecting either inversion or non-inversion for the data to be transmitted for each group (Fig. 3, item 312; column 5, lines 39-53); and an inversion circuit (Fig. 2, item 216) for inverting the data to be transmitted for the group, of which the data is determined to be inverted by said selection circuit.

With regard to claims 6-10, Drapkin discloses a data transmitter, where the selection circuit selects either inversion or non-inversion of the data to be transmitted for each group, based on whether the number of data to be changed counted for each group by the counting circuit is in a predetermined range or not (column 5, lines 29-53).

Drapkin does not expressly disclose a display device connected to the receiving block, as claimed. However, Asano discloses a display device (column 3, lines 55-65).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Asano with Drapkin. The suggestion or motivation for doing so would have been to effectively reduce EMI radiation without requiring the use of filters, etc., even under conditions where EMI radiation most easily occurs, such as at an LCD video interface (column 2, lines 47-51).

Therefore, it would have been obvious to combine Asano with Drapkin to obtain the invention as specified in claims 1-3 and 5-13.

3. Claims 4 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drapkin in view of Asano as applied to claims 1, 5, and 11-13 above, and further in view of U.S. Patent No. 5,931,927 to Takashima.

With regard to claim 4, Drapkin discloses a device including: a plurality of drivers (Fig. 2, item 202) for driving a display panel; a controller (Fig. 2, item 208) for controlling the drivers; and a predetermined number of signal lines wired between the drivers and the controller (Fig. 2, item 210), where the controller includes: a determination unit for determining whether inversion should be performed or not for each group, regarding digital signals to be transferred through said signal lines divided into a plurality of groups (column 5, lines 29-53; Fig. 3, bit group 1, bit group 1, and item 312), where the determination unit includes a counting circuit adapted for counting a difference between data to be transferred immediately before the data to be transferred for each group (column 5, lines 54-61); an inversion unit (Fig. 2, item 216) for inverting the digital signals to be transferred for the group determined to be inverted; and a transmission unit (Fig. 2, item 218) for transmitting the digital signals to the signal lines, and each of the drivers includes: a receiving unit (Fig. 2, item 222) for receiving the digital signals transferred through the signal lines; and a decoding unit (Fig. 2, item 220) for returning, among the digital signals received by the receiving unit, a digital signal of the group having been subjected to digital signal inversion by the inversion unit to the original signal. (See *generally*, column 3, lines 8-67 to column 4, lines 1-67).

Drapkin does not expressly disclose the device being a display device, as claimed. However, Asano discloses a display device (column 3, lines 55-65).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Asano with Drapkin. The suggestion or motivation for doing so would have been to effectively reduce EMI radiation without requiring the use of filters, etc., even under conditions where EMI radiation most easily occurs, such as at an LCD video interface (column 2, lines 47-51).

Drapkin in view of Asano does not expressly disclose a statistics analyzer connected to the counting circuit, where the statistics analyzer is adapted to determine whether any of: neither data of each group is inverted; data of each group is inverted; data of a first group is inverted while data of a second group is not inverted; data of the second group is inverted while data of the first group is not inverted; and data of each group is inverted.

Takashima discloses a statistics analyzer connected to the counting circuit, where the statistics analyzer is adapted to determine whether any of: neither data of each group is inverted; data of each group is inverted; data of a first group is inverted while data of a second group is not inverted; data of the second group is inverted while data of the first group is not inverted; and data of each group is inverted (*see generally*, column 8, lines 45-67 to column 10, lines 1-30).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Takashima with Drapkin in view of Asano. The suggestion or motivation for doing so would have been to provide an output device, which can effect a

substantial reduction in peak current flowing through power supply pins and can suppress the fluctuations of power supply voltages due to parasitic inductance associated with the power supply lines even if a plurality of output lines are switched at the same time (column 3, lines 45-55).

Therefore, it would have been obvious to combine Takashima with Drapkin in view of Asano to obtain the invention as specified in claim 4.

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With regard to claims 14-20, and as discussed above, Drapkin in view of Asano discloses all the features of independent claims 1, 5, 11, 12, and 13.

Drapkin in view of Asano does not expressly disclose a statistics analyzer connected to the counting circuit, where the statistics analyzer is adapted to determine whether any of: neither data of each group is inverted; data of each group is inverted; data of a first group is inverted while data of a second group is not inverted; data of the second group is inverted while data of the first group is not inverted; and data of each group is inverted.

Takashima discloses a statistics analyzer connected to the counting circuit, where the statistics analyzer is adapted to determine whether any of: neither data of each group is inverted; data of each group is inverted; data of a first group is inverted while data of a second group is not inverted; data of the second group is inverted while data of the first group is not inverted; and data of each group is inverted (*see generally*, column 8, lines 45-67 to column 10, lines 1-30).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Takashima with Drapkin in view of Asano. The suggestion or



motivation for doing so would have been to provide an output device, which can effect a substantial reduction in peak current flowing through power supply pins and can suppress the fluctuations of power supply voltages due to parasitic inductance associated with the power supply lines even if a plurality of output lines are switched at the same time (column 3, lines 45-55).

Therefore, it would have been obvious to combine Takashima with Drapkin in view of Asano to obtain the invention as specified in claims 14-20.

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### ***Response to Arguments***

4. Applicant's arguments, see pages 14-17, filed July 14, 2004, with respect to the rejection of claims 1-3 and 5-13 under 35 U.S.C. 102(e) and claims 4 and 14-15 under 35 U.S.C. 102(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection is made in view of Asano and Takashima.

The Examiner was persuaded that Drapkin does not teach the display device, as recited in the amended claims. However, Asano teaches this feature.

The Examiner was also persuaded that Drapkin in view of Asano does not teach the statistics analyzer, as recited in the amended and new claims. However, Takashima teaches this feature.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

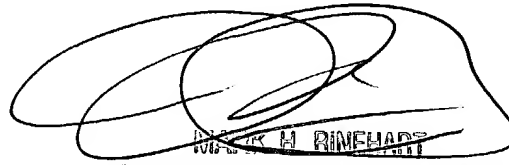
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna K. Mason whose telephone number is (571) 272-3629. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKM



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